The APEC CLIMATE CENTER

Climate Outlook for Pacific Islands for March – August 2018

BUSAN, 26 February 2018 – The synthesis of the latest model forecasts for March to August 2018 (MAMJJA) from the APEC Climate Center (APCC), located in Busan, South Korea, indicates a below normal temperature anomaly across the eastern equatorial Pacific with a weak negative El Niño-Southern Oscillation (ENSO) phase. Above normal temperatures are expected to prevail over all of Melanesia and the whole of Micronesia and Polynesia, except in the equatorial belt for the whole forecast period. For the same period, above normal rainfall is probable for off-equatorial Micronesia and northern Polynesia, whereas below normal rainfall is probable for the equatorial belt of Micronesia and Polynesia.

Sea Surface Temperature and ENSO Outlook:

The prevailing ENSO phase is expected to be negative. A tongue of negative SST anomalies in the central and eastern equatorial Pacific is predicted. The positive SST anomalies are expected to surround this cold tongue and span the tropical Pacific, which corresponds to a negative Niño 3.4 index. The La Niña condition continues throughout the first half of the forecast period and weakens slightly by the second half of the forecast period, leaning toward neutral conditions.

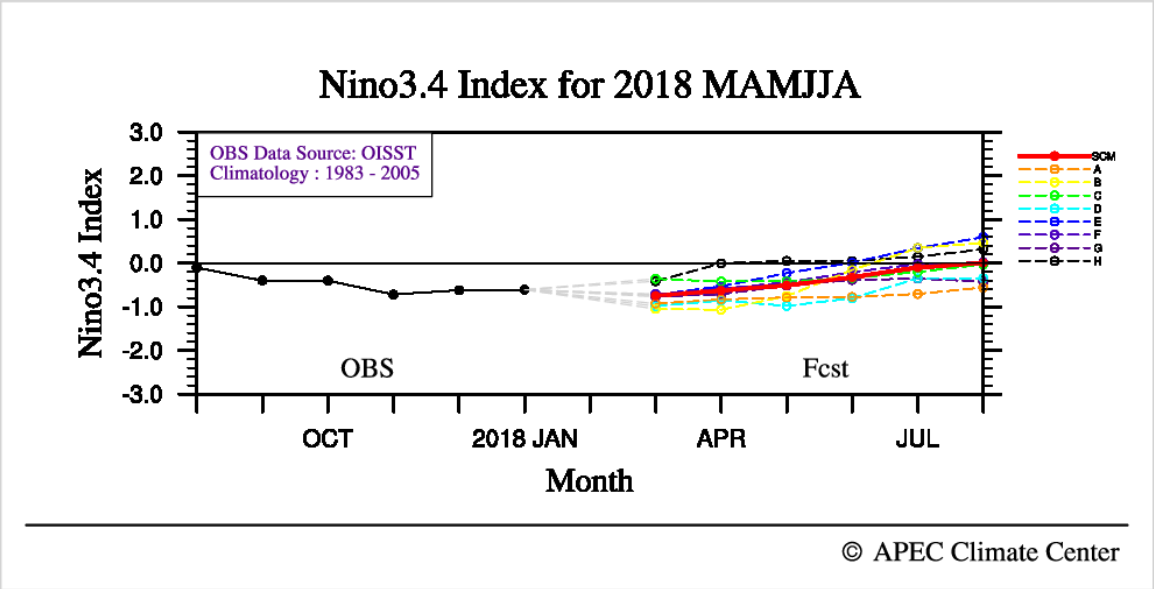
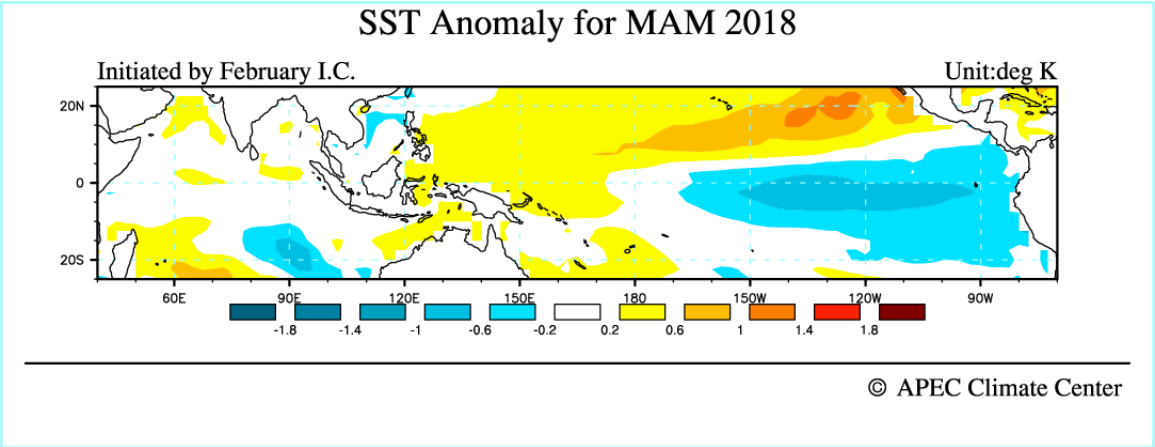


Fig. 1. Predicted Niño 3.4 Index from individual models (A, B, C, D, E, F, G, and H) and the simple composite Multi-Model Ensemble (MME) method (SCM).



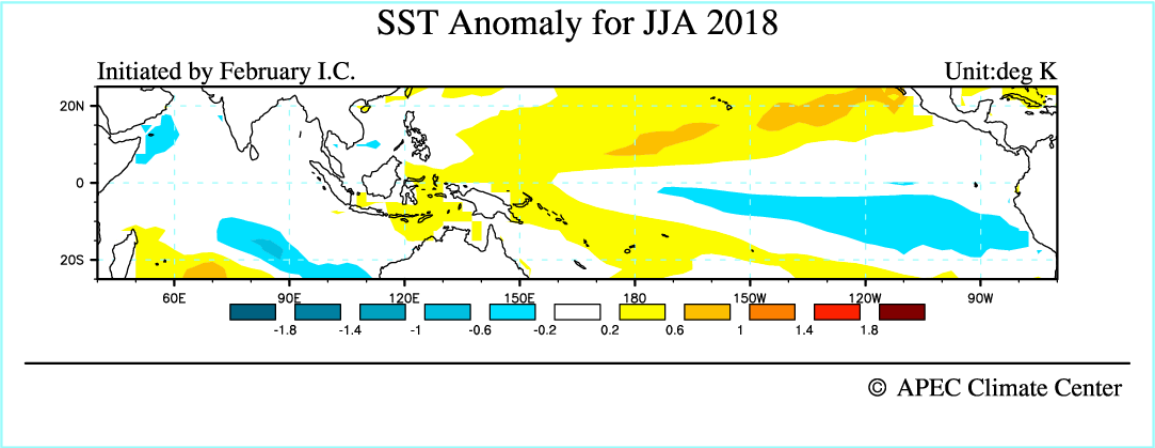


Fig. 2. Spatial distributions of forecasted SST anomalies for March – August 2018 over the tropical Indo-Pacific. The top panel shows the SST anomaly forecast for March – May 2018 and the bottom panel shows the SST anomaly forecast for June – August 2018.

Temperature and Precipitation Outlook:

1. **Forecast for March – May 2018**

Strongly enhanced probability for above normal temperatures is predicted for Micronesia, northern Melanesia, and northern Polynesia, except in the equatorial belt. Enhanced probability for above normal temperatures is expected for Melanesia. Strongly enhanced probability for below normal temperatures is predicted for the equatorial belt of Polynesia. A tendency for near normal temperatures is expected for the boundary between Polynesia and Melanesia. Strongly enhanced probability for above normal precipitation is expected for off-equatorial northern Polynesia. Enhanced probability for above normal precipitation is predicted for off-equatorial Micronesia and Polynesia, and eastern Melanesia. Strongly enhanced probability for below normal precipitation is expected for equatorial Micronesia and Polynesia.

2. **Forecast for June – August 2018**

Strongly enhanced probability for above normal temperatures is predicted for off-equatorial Micronesia and some parts of Melanesia and Micronesia. Enhanced probability for above normal temperatures is expected for off-equatorial Polynesia. Strongly enhanced probability for below normal temperatures is predicted for the equatorial belt of Polynesia. Enhanced probability for near normal temperatures is predicted for equatorial Micronesia. Enhanced probability for above normal precipitation is expected for northern off-equatorial Micronesia and Polynesia. Strongly enhanced probability for below normal precipitation is expected for equatorial Micronesia and Polynesia.

3. **Historical skill for APCC MME for MAM and JJA**

Across the Pacific for the MAMJJA period, the APCC MME is reasonably skillful in predicting both temperatures and precipitation, as indicated by the Heidke Skill Score (HSS). The highest HSS values are featured by temperatures over all of Micronesia and Polynesia for MAM. For the same period, the HSS values for precipitation over equatorial Micronesia and Polynesia are higher than those over the other regions. The HSS values for temperature and precipitation over the Pacific Islands region for JJA become lower than those for the previous season.

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The APCC climate forecasts are based on model simulations from 16 prominent climate forecasting centers and institutes in the APEC region. These forecasts are collected and combined using state-of-the-art schemes to produce a statistically 'consensual' forecast. The APCC forecasts are based not just on the magnitude of the seasonal changes that are predicted, but also take into account their simulated probability. Further details as well as the verification for the forecasts on a long term basis are available at http://www.apcc21.org. Historical verification of the forecast performance is based on a retrospective forecast period of all the models for the period 1983-2005.

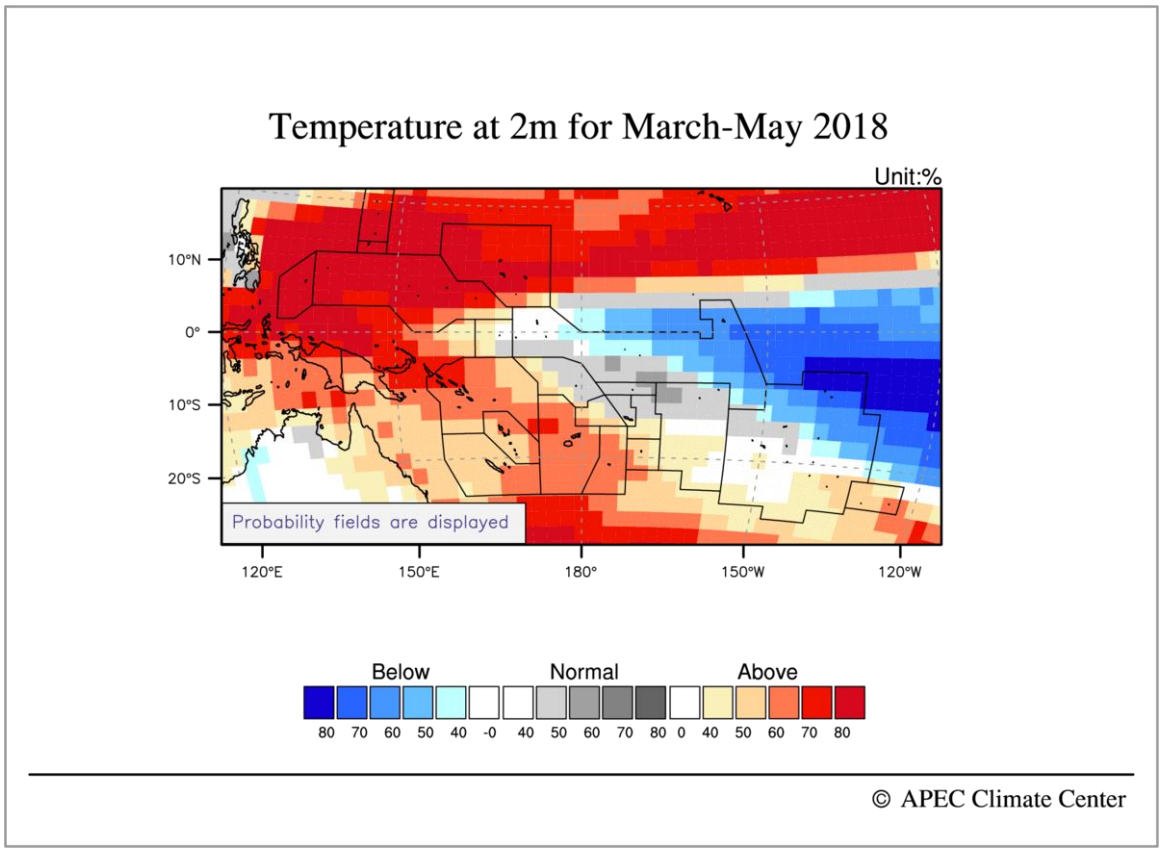

Fig. 3. Probabilistic MME seasonal 2m temperature forecast for March – May 2018.

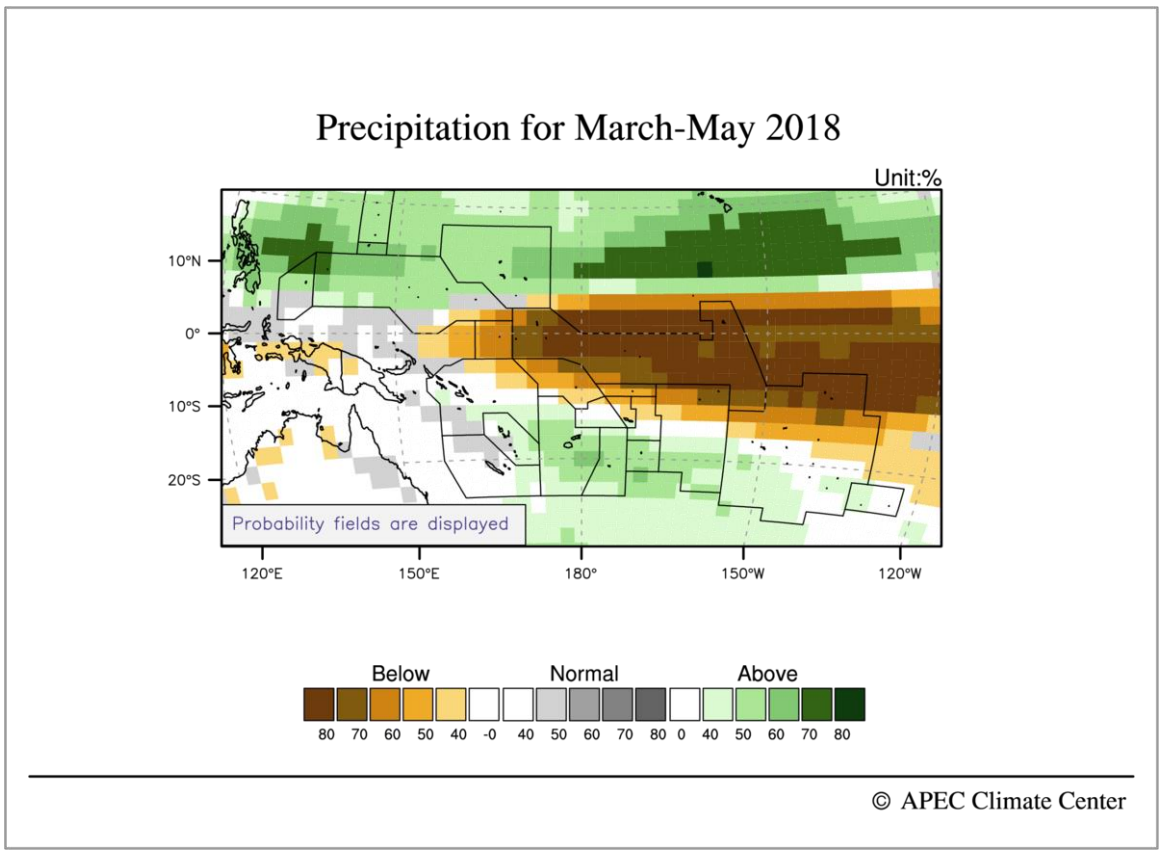

Fig. 4. Probabilistic MME seasonal precipitation forecast for March – May 2018.

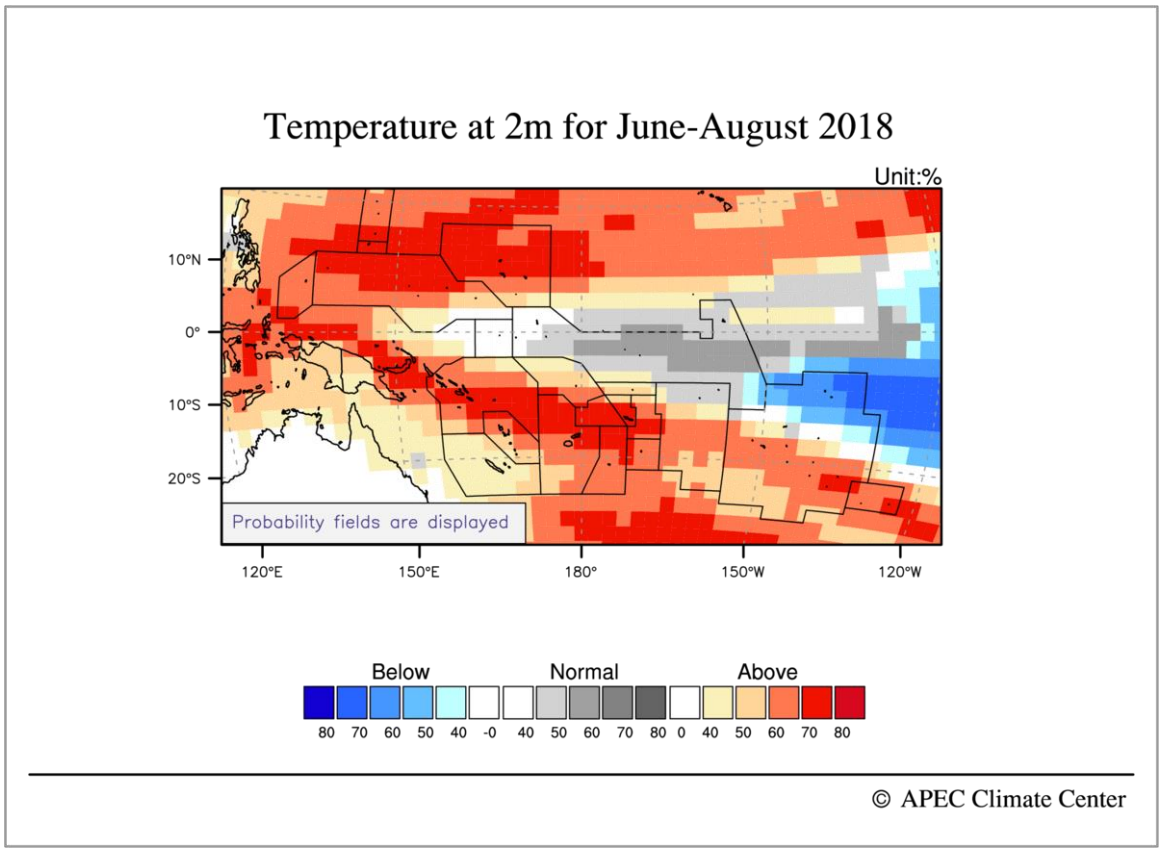

Fig. 5. Probabilistic MME seasonal 2m temperature forecast for June – August 2018.

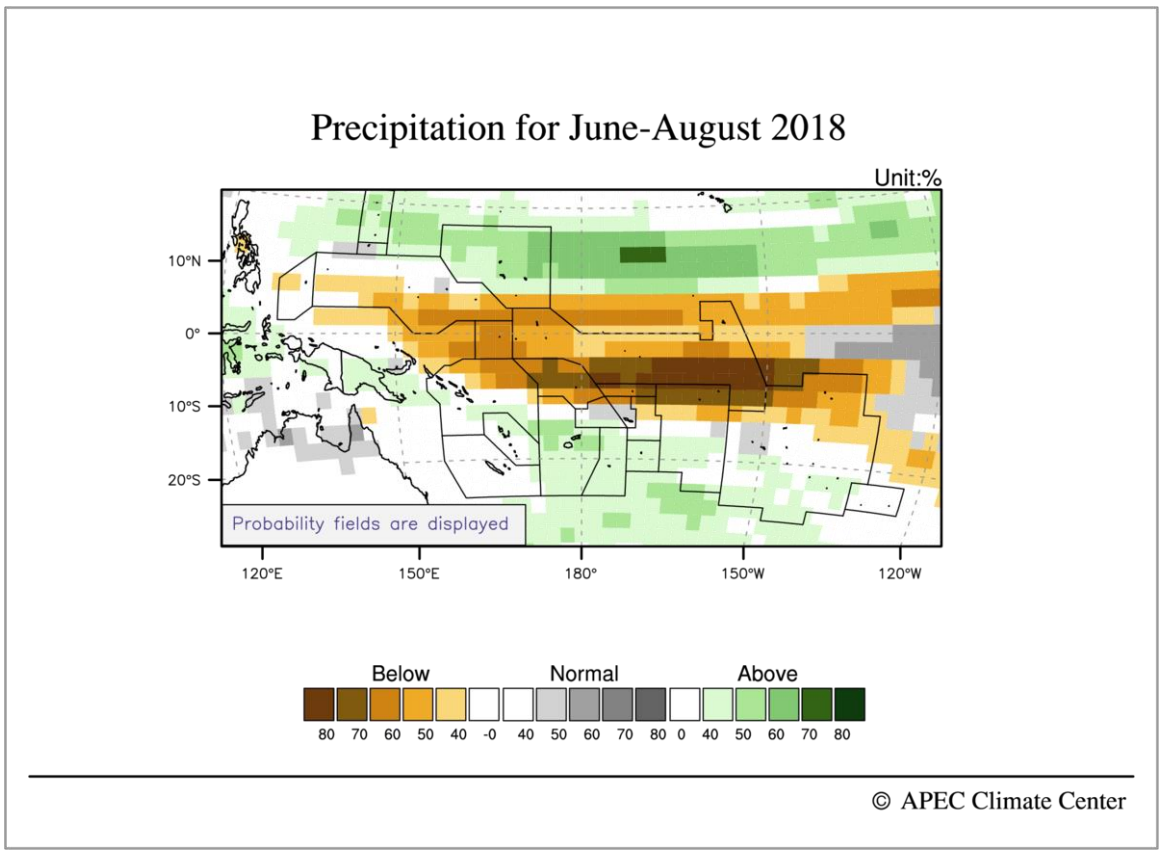

Fig. 6. Probabilistic MME seasonal precipitation forecast for June – August 2018.

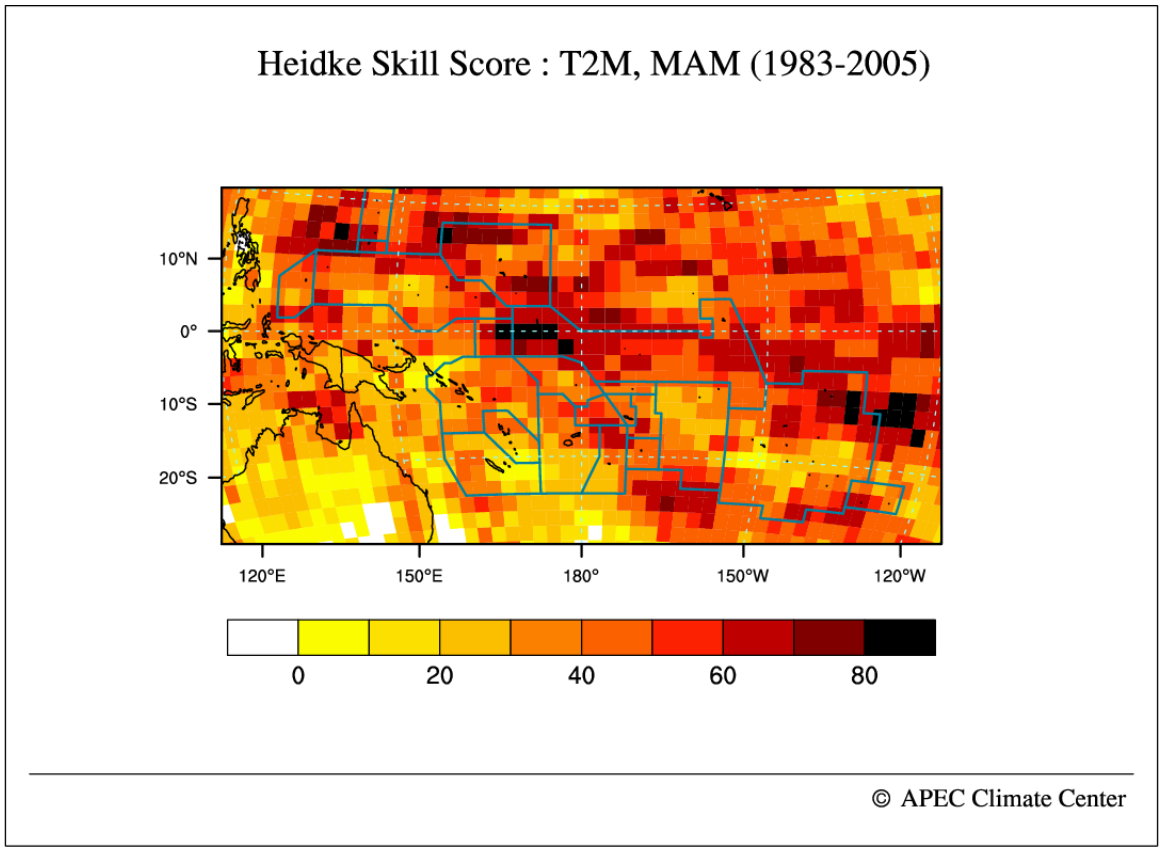

Fig. 7. Heidke Skill Score for probabilistic MME seasonal 2m temperature forecast for March – May.

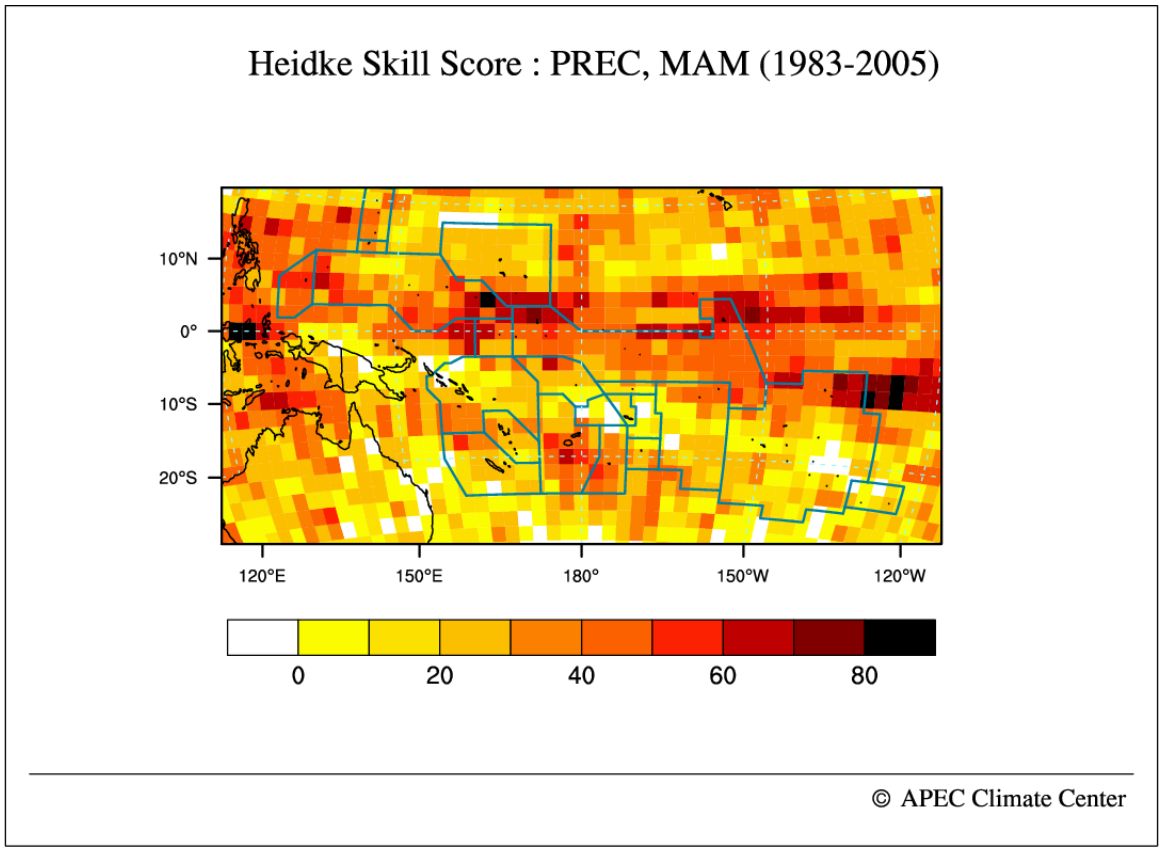

Fig. 8. Heidke Skill Score for probabilistic MME seasonal precipitation forecast for for March – May.

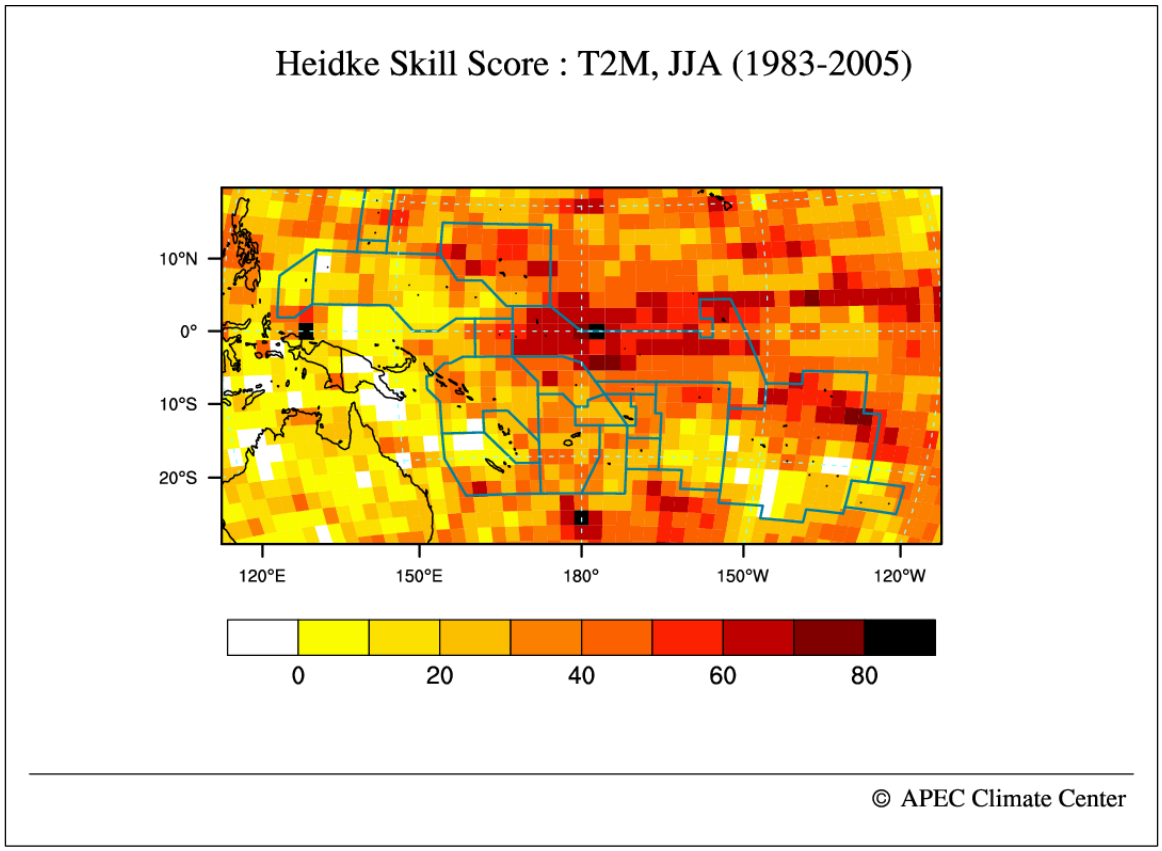

Fig. 9. Heidke Skill Score for probabilistic MME seasonal 2m temperature forecast for June – August.

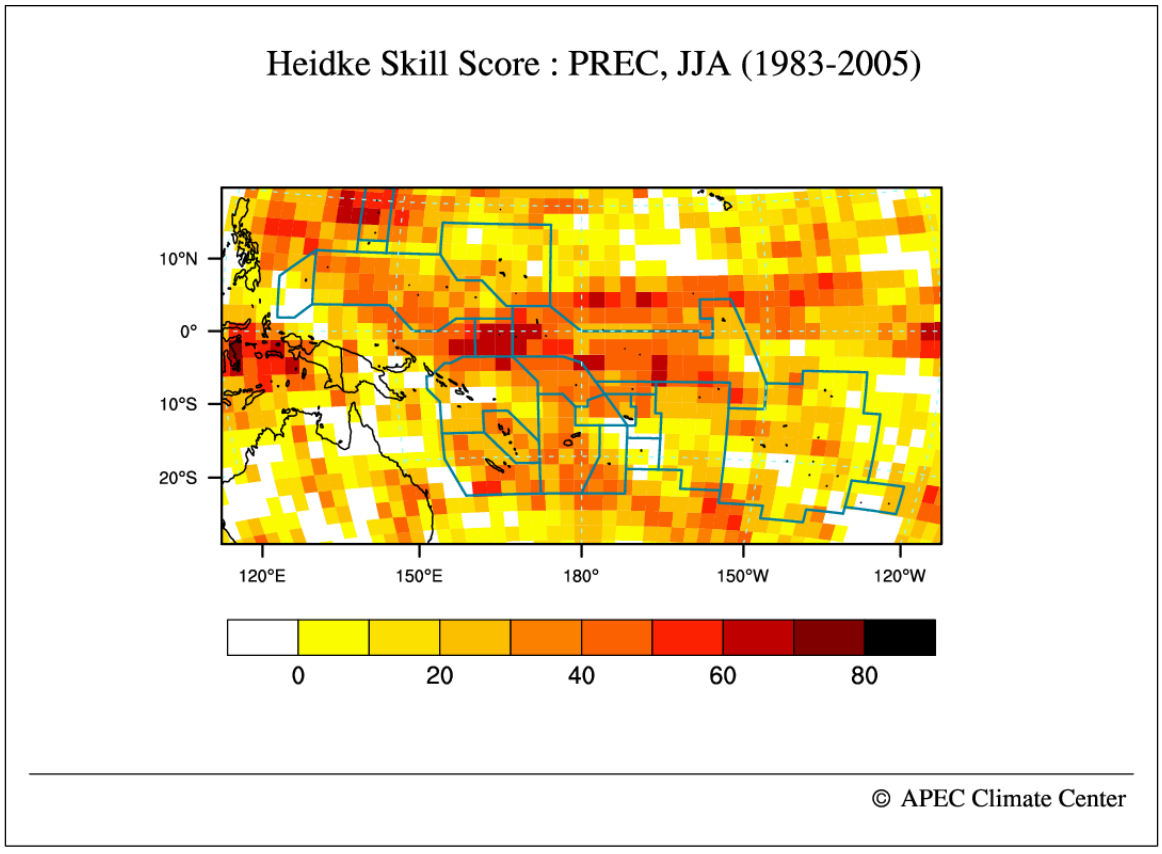

Fig. 10. Heidke Skill Score for probabilistic MME seasonal precipitation forecast for June – August.